

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 18 July 2000 (18.07.00)	Applicant's or agent's file reference PF980080
International application No. PCT/EP99/09025	Priority date (day/month/year) 25 November 1998 (25.11.98)
International filing date (day/month/year) 11 November 1999 (11.11.99)	Priority date (day/month/year) 25 November 1998 (25.11.98)
Applicant PLISSONNEAU, Frédéric et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
19 June 2000 (19.06.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer <p style="text-align: center;">F. Baechler</p> Telephone No.: (41-22) 338.83.38
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CLAIMS

1. Process for coding images according to the MPEG standard, for the inseting of at least one imagette into an image, utilizing the inter mode (6, 7) with motion estimation (12) with respect to a reference image and the intra mode (7), characterized in that:

- an exclusion zone (4) which includes the macroblocks which lie even partially in the location of the imagette is defined in the image,

- the motion estimation (12) of the macroblocks of the image not belonging to the exclusion zone cannot take account of an image block belonging to the exclusion zone in the reference image.

2. Process according to Claim 1, characterized in that the inter mode for the coding of the macroblocks of the image belonging to an exclusion zone (4) is an inter mode with null motion vectors.

3. Process according to Claim 1, characterized in that the intra mode is forced for the coding of the macroblocks of the image belonging to an exclusion zone (4).

4. Process according to Claim 1, characterized in that it carries out a marking (18, 19) of the macroblocks of the reference image belonging to the exclusion zone.

5. Process according to Claim 4, characterized in that the marking consists in performing a transcoding (18) of the luminance values of the macroblocks by decrementing the values equal to the maximum coding value and then by forcing the luminance values of the macroblocks belonging to the exclusion zone to this maximum value.

6. Process according to Claim 1, characterized in that, for a given row of macroblocks, the coding (14, 16) allocates a specific slice for the macroblocks belonging to an exclusion zone.

7. Process for inserting an imagette into an image coded according to the process of Claim 3, characterized in that the macroblocks of an intra-coded slice are replaced by macroblocks relating to the imagette.

8. Process according to Claim 7, characterized in that the replacement consists of a recovery of the intra-coded macroblocks corresponding to the exclusion zones, a baseband decoding of these macroblocks, a mixing with the imagette to be inset into the exclusion zone, a coding of the image obtained so as to provide the replacement macroblocks.

9. Process according to Claim 7, characterized in that the coding adapts the quantization interval for the macroblocks belonging to the exclusion zone as a function of the cost of coding the macroblocks to be inserted.

10. Device for coding digital video data according to the MPEG
5 standard for the inseting of at least one imagette into an image, comprising a subtractor (6) receiving on a first input an intra macroblock and on a second input a predicted macroblock to be subtracted from the intra macroblock so as to provide an inter macroblock, a circuit (7) for selecting an inter or intra mode receiving the corresponding intra macroblock or inter macroblock for selecting
10 one of the macroblocks according to an energy criterion, a circuit (8) for transforming and quantizing the macroblock selected so as to provide a macroblock of quantized coefficients, a circuit (13) for the variable-length coding of the macroblock of quantized coefficients and a buffer memory (14) for providing a data stream at the output of the coding device, an inverse
15 quantization and inverse transformation circuit (9) for obtaining a macroblock reconstituted from the macroblock of quantized coefficients, an adder (10) of the reconstituted macroblock to the predicted macroblock so as to provide a reconstructed macroblock, a memory and predictor (11) for storing the reconstructed macroblock and providing a reconstructed image, a motion
20 estimator (12) receiving the intra macroblock and the reconstructed macroblocks so as to provide a motion vector (MV) for the memory and predictor so as to calculate the predicted block, a regulating circuit (15) receiving information from the buffer memory so as to set a quantization interval for the transform and quantization circuit (8), characterized in that:

- 25 - the selection circuit (7) and the motion estimation circuit (12) receive an information item pertaining to an exclusion zone (ZE) which includes the macroblocks lying, even partially, in the location of the imagette,
- the selection circuit (7) forces the intra-coding of the macroblocks belonging to this exclusion zone,
- 30 - the motion estimation circuit (12) calculates the motion vectors while eliminating the motion vectors pointing from the blocks of the reconstructed image belonging to the exclusion zone.

11. Device according to Claim 10, characterized in that the regulating circuit (15) receives the information item defining an exclusion zone
35 so as to adapt the quantization interval of the transform and quantization circuit (8) for the macroblocks in this exclusion zone.

2/2

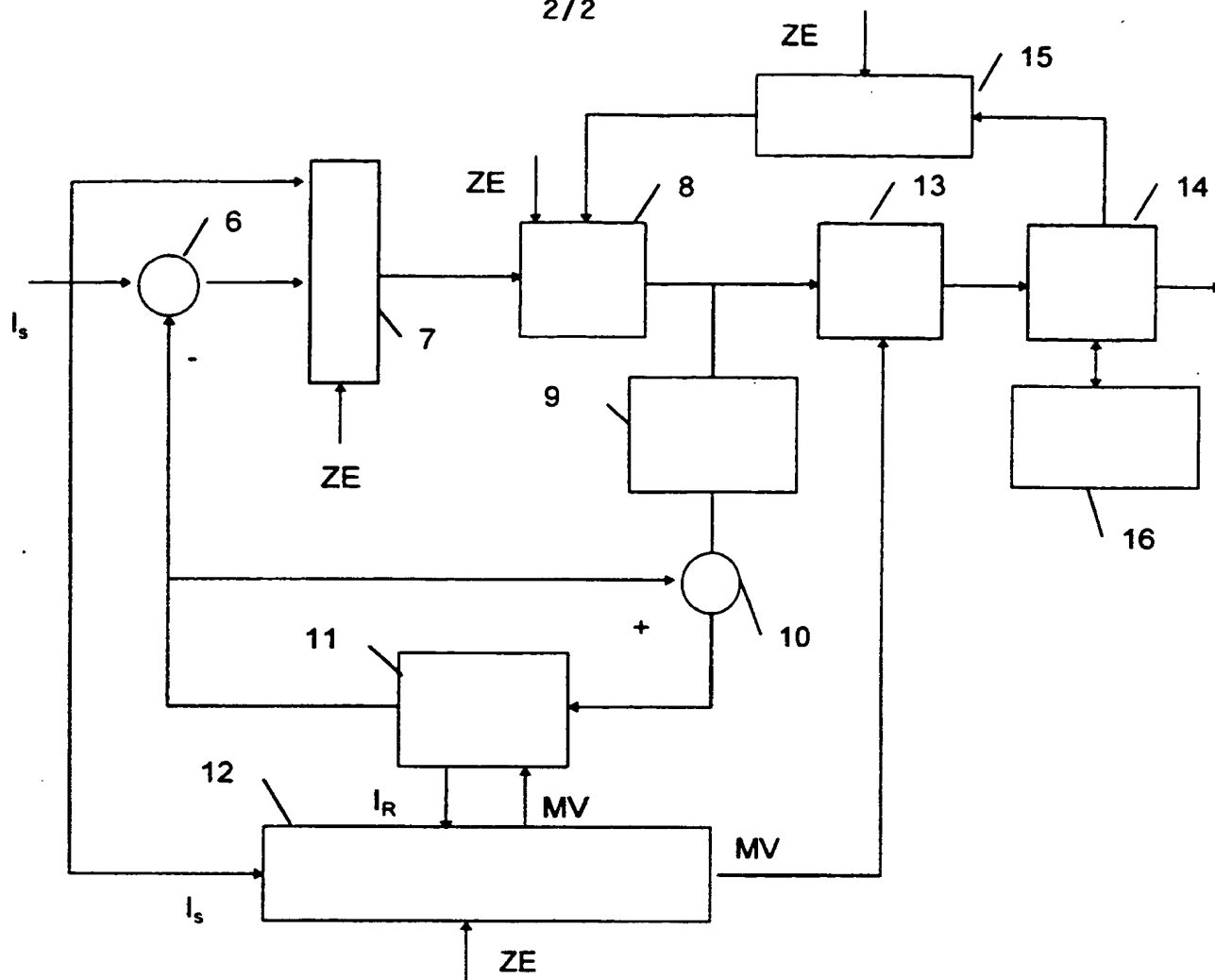


Fig. 3

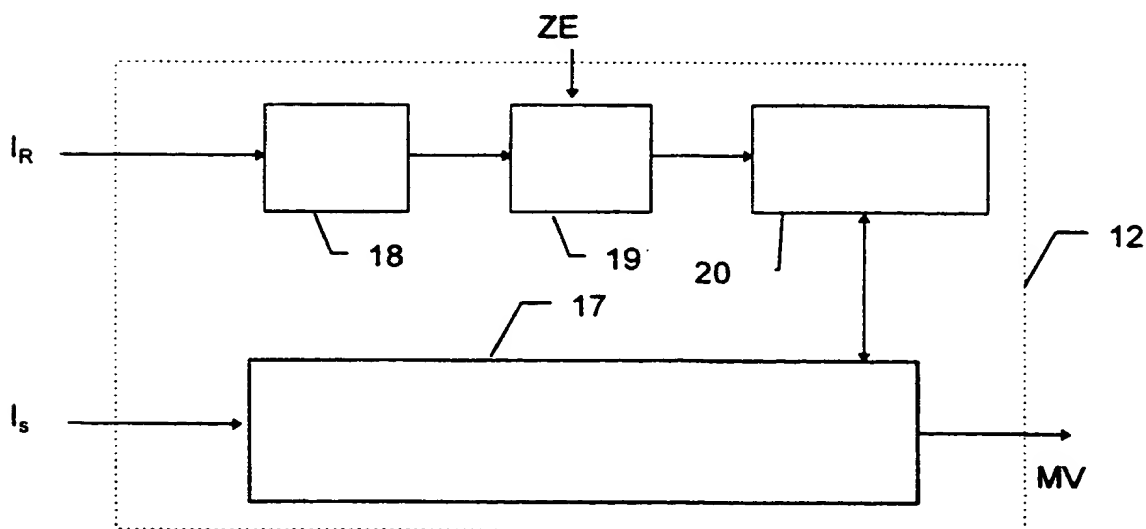


Fig. 4

CLAIMS

5 1. Process for coding images according to the MPEG standard, for the inseting of at least one imagette into an image, utilizing the inter mode (6, 7) with motion estimation (12) with respect to a reference image and the intra mode (7), characterized in that:

10 - an exclusion zone (4) which includes the macroblocks which lie even partially in the location of the imagette is defined in the reference image,

 - the motion estimation (12) of the macroblocks of the image not belonging to the exclusion zone does not take account of an image block belonging to the exclusion zone in the reference image.

15 - macroblocks belonging to the exclusion zone of the image are replaced by macroblocks making up the imagette.

 2. Process according to Claim 1, characterized in that the inter mode for the coding of the macroblocks of the image belonging to an exclusion zone (4) is an inter mode with null motion vectors.

20 3. Process according to Claim 1, characterized in that the intra mode is forced for the coding of the macroblocks of the image belonging to an exclusion zone (4).

 4. Process according to Claim 1, characterized in that it carries out a marking (18,19) of the macroblocks of the reference image belonging to the exclusion zone.

25 5. Process according to Claim 4, characterized in that the marking consists in performing a transcoding (18) of the luminance values of the macroblocks by decrementing the values equal to the maximum coding value and then by forcing the luminance values of the macroblocks belonging to the exclusion zone to this maximum value.

30

6. Process according to Claim 1, characterized in that, for a given row of macroblocks, the coding (14, 16) allocates a specific slice for the macroblocks belonging to an exclusion zone.

5 7. Process for inserting an imagette into an image coded according to the process of Claim 3, characterized in that the macroblocks of an intra-coded slice are replaced by macroblocks relating to the imagette.

8. Process according to Claim 7, characterized in that the replacement consists of a recovery of the intra-coded macroblocks
10 corresponding to the exclusion zones, a baseband decoding of these macroblocks, a mixing with the imagette to be inset into the exclusion zone, a coding of the image obtained so as to provide the replacement macroblocks.

9. Process according to Claim 7, characterized in that the coding
15 adapts the quantization interval for the macroblocks belonging to the exclusion zone as a function of the cost of coding the macroblocks to be inserted.

10. Device for coding digital video data according to the MPEG standard for the inseting of at least one imagette into an image, comprising
20 a subtractor (6) receiving on a first input an intra macroblock and on a second input a predicted macroblock to be subtracted from the intra macroblock so as to provide an inter macroblock, a circuit (7) for selecting an inter or intra mode receiving the corresponding intra macroblock or inter macroblock for selecting one of the macroblocks according to an energy
25 criterion, a circuit (8) for transforming and quantizing the macroblock selected so as to provide a macroblock of quantized coefficients a circuit (13) for the variable-length coding of the macroblock of quantized coefficients and a buffer memory (14) for providing a data stream at the output of the coding device, an inverse quantization and inverse transformation circuit (9) for
30 obtaining a macroblock reconstituted from the macroblock of quantized coefficients an adder (10) of the reconstituted macroblock, a memory and

predictor (11) for storing the reconstructed macroblock and providing a reconstructed image, a motion estimator (12) receiving the intra macroblock and the reconstructed macroblocks so as to provide a motion vector (MV) for the memory and predictor so as to calculate the predicted block, a regulating circuit (15) receiving information from the buffer memory so as to set a quantization interval for the transform and quantization circuit (8), characterized in that::

- the selection circuit (7) and the motion estimation circuit (12) receive an information item pertaining to an exclusion zone (ZE) which includes the macroblocks lying, even partially, in the location of the imagette,
- the selection circuit (7) forces the intra-coding of the macroblocks belonging to this exclusion zone,
- the motion estimation circuit (12) calculates the motion vectors while eliminating the motion vectors pointing from the blocks of the reconstructed image belonging to the exclusion zone

and in that it comprises a substitution circuit to substitute, in the data stream, macroblocks corresponding to the exclusion zone by macroblocks coding the imagette.

11. Device according to Claim 10, characterized in that the regulating circuit (15) receives the information item defining an exclusion zone so as to adapt the quantization interval of the transform and quantization circuit (8) for the macroblocks in this exclusion zone.

2/2

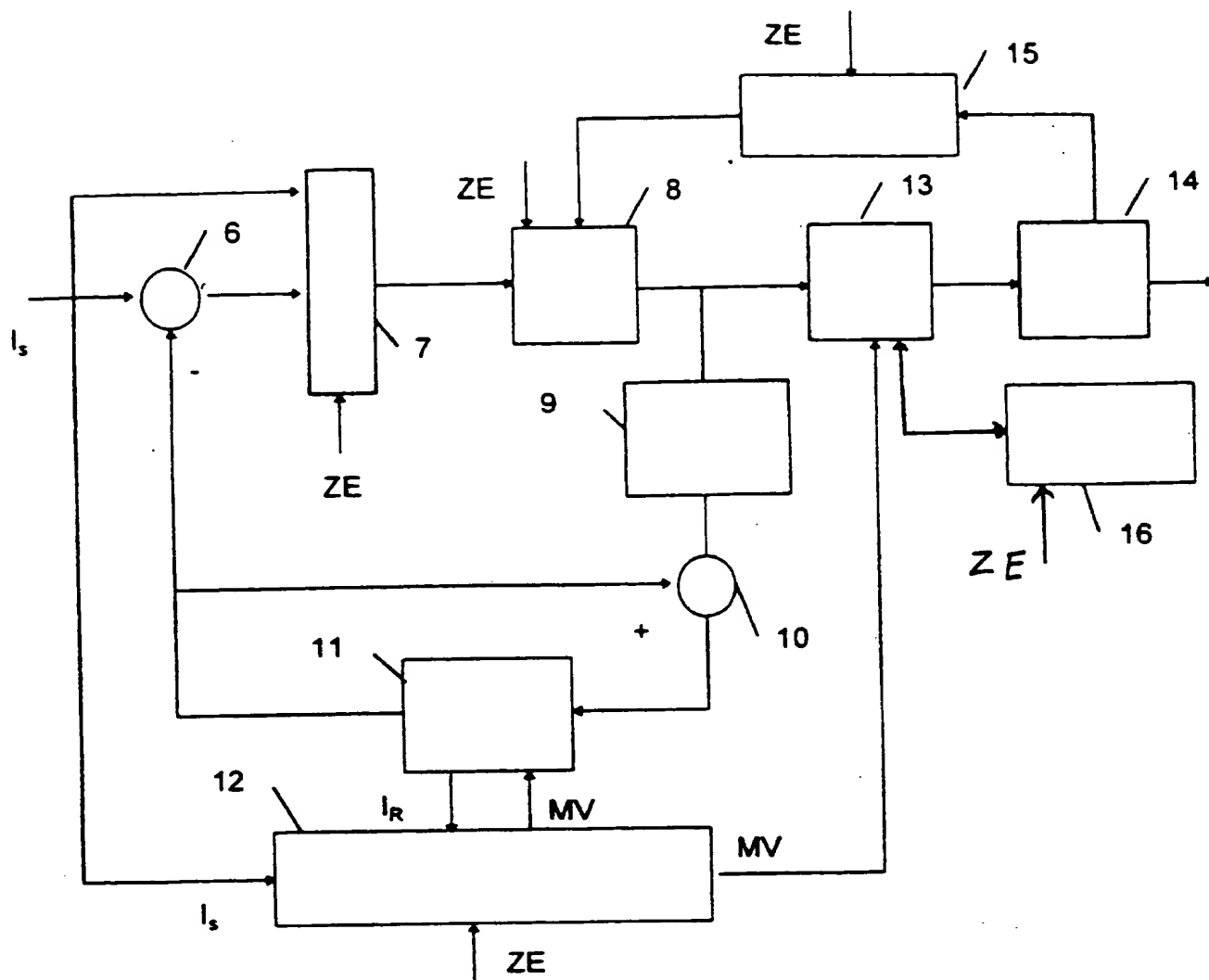


Fig. 3

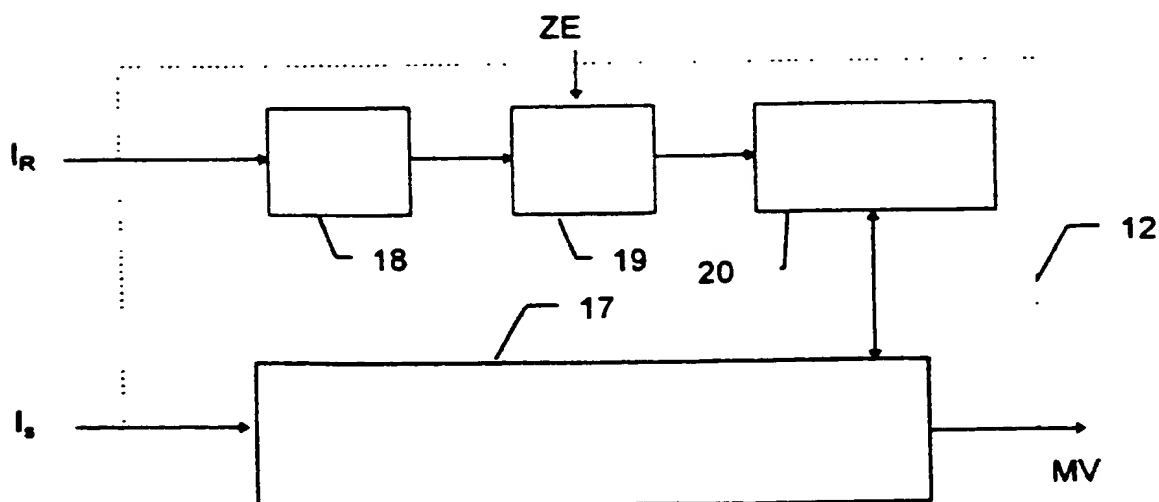


Fig. 4

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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PATENT COOPERATION TREATY

THOMSON multimedia
RECEIVED

16 NOV. 2000

PCT Patent Department
Administration - Paris

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

RUELLAN LEMONNIER, Brigitte
THOMSON MULTIMEDIA
46 Quai Alphonse Le Gallo
F-92648 Boulogne Cedex
FRANCE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 14.11.2000

Applicant's or agent's file reference
PF980080

IMPORTANT NOTIFICATION

International application No.
PCT/EP99/09025

International filing date (day/month/year)
11/11/1999

Priority date (day/month/year)
25/11/1998

Applicant
THOMSON MULTIMEDIA et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



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D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 eprmu d
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Authorized officer

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PF980080	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/09025	International filing date (day/month/year) 11/11/1999	Priority date (day/month/year) 25/11/1998
International Patent Classification (IPC) or national classification and IPC H04N7/46		
Applicant THOMSON MULTIMEDIA et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.




2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 19/06/2000 	Date of completion of this report 14.11.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer de Dieuleveult, A Telephone No. +49 89 2399 8946 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/09025

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-12 as originally filed

Claims, No.:

1-11 as received on 02/11/2000 with letter of 30/10/2000

Drawings, sheets:

1/2 as originally filed

2/2 as received on 02/11/2000 with letter of 30/10/2000

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/09025

- ☐ the description. pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 1-11
	No:	Claims
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-11
Industrial applicability (IA)	Yes:	Claims 1-11
	No:	Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

V. Reasoned statement

1. Reference is made to the following documents:

D1: EP-A-0 650 298 (SONY CORP) 26 April 1995 (1995-04-26)

2. Claim 1:

Document D1 discloses (see in particular figures 7A and 13) a process for coding images according to the MPEG standard (see page 4, lines 8-13), **suitable for** the inseting of at least one imagette (see the "Extra_Slice" of Fig.7A: in this case, the imagette is equivalent to the "second picture portion" represented by the bottom 16 lines) into an image, utilizing the inter mode with motion estimation with respect to a reference image and the intra mode (see "first and fourth motion compensation modes" on p. 11, l. 32-42), characterized in that:

- an exclusion zone which includes the macroblocks which lie even partially in the location of the imagette is defined in the reference image (see p. 11, l. 11-12 in relation to the following),

- the motion estimation of the macroblocks of the image not belonging to the exclusion zone (i.e. from the first picture portion) does not take account of an image block belonging to the exclusion zone (i.e. to the second picture portion) in the reference image (in accordance with p. 4, l. 40-42).

The claimed subject-matter thus only differs from the disclosure of D1 in that macroblocks belonging to the exclusion zone of the image are replaced by macroblocks making up the imagette, whereas no such replacement is taking place in D1 since the exclusion zone is identical to the imagette.

However, it appears to be obvious for the skilled person, knowing the process of D1 and faced with the problem of inseting the imagette into the image instead of just appending the imagette onto the image, that such a replacement is required. The fact that D1 is dealing with hierarchical coding layers rather than with explicit inseting of an imagette is deemed irrelevant.

Therefore, claim 1 is considered to lack an inventive step with respect to the disclosure of D1.

3. Claim 10:

Document D1 also discloses the corresponding device (see figures 1 and 6) which further differs from the claimed subject-matter in that the "selection circuit" is

comprised in its motion prediction circuit. However, having the motion compensator send a zero signal to the subtractor in the "mode of no motion compensation" (i.e. the fourth mode) is clearly equivalent to having the claimed selection circuit switch to the "intra macroblock" position. Consequently, this claim is considered to lack an inventive step with respect to D1.

4. Claims 2-9 and 11:

These dependent claims do not appear to comprise any additional features that would render their subject-matter inventive over the available prior art. Therefore, these claims fail together with the independent claims for lack of inventive step.

VII. Certain defects

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.
2. For consistency with Fig. 3, the list of items receiving the information ZE (on page 6, lines 21-23 and on page 7, lines 18-22) should include the coding circuit 8.
3. In claim 10: "form" should read "from" (3 times); and on the last line of page 14: "to the predicted macroblock so as to provide a reconstructed macroblock" has been erroneously deleted after "reconstituted macroblock".

VIII. Certain observations

1. Claim 1 contravenes Article 6 PCT because a complete process is not defined: how the motion estimation takes place for macroblocks either belonging or not belonging to the exclusion zone indeed remains obscure.

PATENT COOPERATION TREATY

PCT

REC'D 16 NOV 2000

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PF980080	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/09025	International filing date (day/month/year) 11/11/1999	Priority date (day/month/year) 25/11/1998
International Patent Classification (IPC) or national classification and IPC H04N7/46		
Applicant THOMSON MULTIMEDIA et al.		

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3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 19/06/2000	Date of completion of this report 14.11.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer de Dieuleveult, A Telephone No. +49 89 2399 8946 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/09025

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-12 as originally filed

Claims, No.:

1-11 as received on 02/11/2000 with letter of 30/10/2000

Drawings, sheets:

1/2 as originally filed

2/2 as received on 02/11/2000 with letter of 30/10/2000

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

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- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
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3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/09025

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-11
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-11
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/09025

V. Reasoned statement

1. Reference is made to the following documents:

D1: EP-A-0 650 298 (SONY CORP) 26 April 1995 (1995-04-26)

2. Claim 1:

Document D1 discloses (see in particular figures 7A and 13) a process for coding images according to the MPEG standard (see page 4, lines 8-13), **suitable for** the inseting of at least one imagette (see the "Extra_Slice" of Fig.7A: in this case, the imagette is equivalent to the "second picture portion" represented by the bottom 16 lines) into an image, utilizing the inter mode with motion estimation with respect to a reference image and the intra mode (see "first and fourth motion compensation modes" on p. 11, l. 32-42), characterized in that:

- an exclusion zone which includes the macroblocks which lie even partially in the location of the imagette is defined in the reference image (see p. 11, l. 11-12 in relation to the following),
- the motion estimation of the macroblocks of the image not belonging to the exclusion zone (i.e. from the first picture portion) does not take account of an image block belonging to the exclusion zone (i.e. to the second picture portion) in the reference image (in accordance with p. 4, l. 40-42).

The claimed subject-matter thus only differs from the disclosure of D1 in that macroblocks belonging to the exclusion zone of the image are replaced by macroblocks making up the imagette, whereas no such replacement is taking place in D1 since the exclusion zone is identical to the imagette.

However, it appears to be obvious for the skilled person, knowing the process of D1 and faced with the problem of inseting the imagette into the image instead of just appending the imagette onto the image, that such a replacement is required. The fact that D1 is dealing with hierarchical coding layers rather than with explicit inseting of an imagette is deemed irrelevant.

Therefore, claim 1 is considered to lack an inventive step with respect to the disclosure of D1.

3. Claim 10:

Document D1 also discloses the corresponding device (see figures 1 and 6) which further differs from the claimed subject-matter in that the "selection circuit" is

comprised in its motion prediction circuit. However, having the motion compensator send a zero signal to the subtractor in the "mode of no motion compensation" (i.e. the fourth mode) is clearly equivalent to having the claimed selection circuit switch to the "intra macroblock" position. Consequently, this claim is considered to lack an inventive step with respect to D1.

4. Claims 2-9 and 11:

These dependent claims do not appear to comprise any additional features that would render their subject-matter inventive over the available prior art. Therefore, these claims fail together with the independent claims for lack of inventive step.

VII. Certain defects

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.
2. For consistency with Fig. 3, the list of items receiving the information ZE (on page 6, lines 21-23 and on page 7, lines 18-22) should include the coding circuit 8.
3. In claim 10: "form" should read "from" (3 times); and on the last line of page 14: "to the predicted macroblock so as to provide a reconstructed macroblock" has been erroneously deleted after "reconstituted macroblock".

VIII. Certain observations

1. Claim 1 contravenes Article 6 PCT because a complete process is not defined: how the motion estimation takes place for macroblocks either belonging or not belonging to the exclusion zone indeed remains obscure.

INTERNET COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PF980080	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 99/ 09025	International filing date (day/month/year) 11/11/1999	(Earliest) Priority Date (day/month/year) 25/11/1998
Applicant THOMSON MULTIMEDIA et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the International search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

3
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 99/09025

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 650 298 A (SONY CORP) 26 April 1995 (1995-04-26) page 4, line 24 -page 5, line 21	1-11

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"G" document member of the same patent family

Date of the actual completion of the international search

1 March 2000

Date of mailing of the international search report

13/03/2000

Name and mailing address of the ISA

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Authorized officer

Raeymaekers, P

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/09025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0650298 A	26-04-1995	AU 667165 B	07-03-1996
		AU 6291394 A	11-10-1994
		US 5946040 A	31-08-1999
		EP 0888012 A	30-12-1998
		WO 9422268 A	29-09-1994
		JP 6334995 A	02-12-1994

INTERNATIONAL SEARCH REPORT

Int. Application No

PCT/EP 99/09025

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N7/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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"&" document member of the same patent family

Date of the actual completion of the international search

1 March 2000

Date of mailing of the international search report

13/03/2000

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/09025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0650298 A	26-04-1995	AU 667165 B	07-03-1996
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